



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,932	11/18/2003	Susumu Ogawa	HITA.0460	3018
38327	7590	06/02/2006	EXAMINER	
REED SMITH LLP 3110 FAIRVIEW PARK DRIVE, SUITE 1400 FALLS CHURCH, VA 22042				RODRIGUEZ, GLENDA P
		ART UNIT		PAPER NUMBER
		2627		

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/714,932	OGAWA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Glenda P. Rodriguez	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 15 March 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-13 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8, 9, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elings et al. (US Patent No. 5, 418, 363) in view of Matsumoto et al. (US Patent No. 5, 723, 227).

Regarding Claim 1, 3, 10 and 12, Elings et al. teaches a magnetization control method comprising:

Providing at least one metal probe (Element 100);

Providing an electric field between said at least one metal probe and a surface to become the height of the potential barrier being effectively high or low compared to a reference value (See Summary and Col. 6, L. 57-67 and Col. 7, L. 1-2 and Col. 8, L. 1-10 and Col. 9, L. 65 to Col. 10, L. 52);

However, Elings et al. does not teach a trilayer substrate and the electric field used to record information to the disk. Matsumoto et al. teaches a trilayer magnetic medium as seen in Fig. 6 and Col. 9, L. 39-67 (It is obvious that when recording a magneto optic medium a laser (which is an alternate electric field is used to emit the specified wavelength to record marks or spots in the medium pertaining to data. According to the Applicant's disclosure of electric field as shown in the Specification in Page 14, L. 19 to Page 15, L. 14). It would have been obvious to a person of

ordinary skill in the art, at the time the invention was made, to modify Elings et al.'s invention with the teaching of Matsumoto et al. in order to be able to record data according to a multi film layers in order to obtain an efficient resolution as seen in the Summary of Matsumoto et al.

Claim (4) has limitations similar to those treated in the above rejection(s), and are met by the references as discussed above. Claim (4) however also recites the following limitations: "wherein said at least one metal probe is structured so that, between said at least one metal probe and said multilayer film, there is applied a voltage for flowing tunnel current through to read information recorded by a change in said tunnel current corresponding to a change in a direction of magnetization due to an electric field which corresponds to the read information (See Matsumoto in Col. 8, L. 50- Col. 9, L. 16, wherein it teaches that due to the electrical current found in the laser, the media is able to reproduce through Element 34)".

Regarding Claims 2, 9, 11 and 13, the combination of Elings et al. and Matsumoto et al. teach all the limitations of Claim 1. The combination further teaches wherein the anti-ferromagnetic layer between the first and second magnetic layer Col. 29, L. 62-65 in Elings et al.

Regarding Claim 8, the combination of Elings et al. and Matsumoto et al. teach all the limitations of Claim 1. The combination further teaches wherein the second ferromagnetic metallic layer of said multilayer film which faces the metallic probe is made into domains which have been spatially divided in units of information to be recorded (See Fig. 6 along with its Description).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elings et al. and Matsumoto et al. as applied to claim 4 above, and further in view of Oumi et al. (US Patent No. 6, 473, 384). The combination of Elings et al. and Matsumoto et al. teach all the limitations of

Claim 4. The combination further teach a multilayer film is formed as a disk-shaped medium for rotation (Element 12c in Matsumoto et al.). However, the combination does not teach a probe in a slider fixed on an arm facing a magnetic disk. Oumi et al. teaches this feature in Col. 1, L. 45-65. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination's invention in order to have a probe and a slider in order to control the clearance as taught in Col. 2, L. 24-42 of Oumi et al.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Elings et al., Matsumoto et al. and Oumi et al. as applied to claims 5 above, and further in view of Gill (US Patent No. 6, 650, 512). The combination teaches all the limitations of Claim 5. However, the combination does not explicitly teach information being recorded by a provided GMR element or a TMR element. Gill does teach the use of a GMR element to control the magnetization in a disk (See Abstract of Gill). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination's invention with the teaching of Gill in order to provide more efficient magnetization to the medium.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Elings et al. and Matsumoto et al. as applied in Claim 4, further in view of Kobayashi (US Patent No. 6, 687, 200). The combination teaches all the limitations of Claim 4. However, the combination does not explicitly teach a plurality of probes. Kobayashi teaches a plurality of probes for magnetization of a media (Col. 21, L. 3-12). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination's invention with the teaching of Kobayashi in order to control the magnetization in the media.

***Response to Arguments***

6. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection due to the newly amended Claims.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: 6, 370, 107 to Hosaka et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



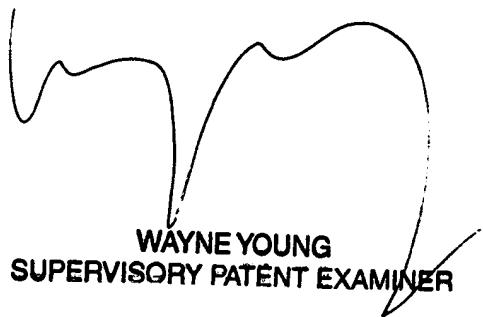
gpr

A handwritten signature in black ink, appearing to read "GPR". Below the signature, the initials "gpr" are printed in a smaller, sans-serif font.

Application/Control Number: 10/714,932  
Art Unit: 2627

Page 6

05/24/06.



WAYNE YOUNG  
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to be "WAYNE YOUNG", with "SUPERVISORY PATENT EXAMINER" written below it in a smaller, all-caps font. The signature is fluid and cursive, with a large, sweeping flourish at the end.